

To this series should be referred *P. miersii*, *P. lehmannii*, *P. trisulca*, *P. watsoniana*, *P. eggersii*, and *P. smithii*. From *P. trisulca*, with which it appears to be most closely related, the proposed species differs in less deeply lobed leaves which have obtuse apices, and in the shape of the petiolar glands.

Apparently two species are represented by Triana's 2947. The plant at Geneva is *P. subpeltata* Ort. (*P. alba* Link & Otto), but the plant at the British Museum is distinct. Triana and Planchon cited no. 2947 as *P. stipulata* (*P. subpeltata*, not *P. stipulata* Aubl.). Triana's 2946, seen at Paris and in the British Museum is also *P. subpeltata*.

***Passiflora cuzcoensis* Killip, sp. nov.**

Plant glabrous throughout; stem terete, or the younger portions subangulate; stipules semi-oblong, 2 to 2.5 cm. long, 0.7 to 0.9 cm. wide, acutish at apex, rounded at base, obscurely crenulate; petioles 2 to 3 cm. long, slender, biglandular in upper third, the glands minute, subulate, 0.5 to 0.8 mm. long; leaves suborbicular in general outline, 3-lobed at apex, 5 to 7 cm. along midnerve, 4 to 6 cm. along lateral nerves (lobes rounded, minutely mucronulate the middle lobe 2 to 3 cm. wide), rounded or subtruncate at base, entire, 5 (or obscurely 7)-nerved, membranous; peduncles slender, 3 to 3.5 cm. long; bracts 3, subimbricate, unequal (one larger than the others), cordate, 2.5 to 3 cm. long, 2 to 2.5 cm. wide, obtuse, crenate-serrulate toward apex, persistent; flowers about 5 cm. wide; calyx tube campanulate; sepals lance-oblong, about 2 cm. long, 1 cm. wide, obtuse, awned dorsally just below apex, the awn foliaceous, up to 5 mm. long; petals lance-oblong, about 1.5 cm. long, 0.8 cm. wide, obtuse; corona filaments in two series, the outer radiate, about 2 cm. long, very slender, apparently concolorous, the inner (borne about 2 mm. from the outer), filiform, 1.5 to 2 mm. long; operculum membranous, about 2 mm. high, denticulate, bearing on outside just below margin a row of very slender filaments about 1 mm. long; limen cupuliform, closely surrounding base of gynophore; ovary not seen.

Type in the U. S. National Herbarium, no. 1,442,740, collected in Marcapata Valley, near Chilechile, Province Guispicanchi, Department Cuzco, Peru, February 21, 1929, by A. Weberbauer (no. 7872).

The unusual arrangement of the bracts indicates the relationship of this species to *P. tetraden*, which it resembles also in the outline of the leaves. The flowers of the two species differ in several details: In *P. cuzcoensis* the sepals are awned, in *P. tetraden* they are without awns, apparently an important difference in the subgenus *Granadilla* to which both belong; the principal or radiate corona filaments are in a single series and concolorous in *P. cuzcoensis*, in two series and alternately banded with blue and white in *P. tetraden*; the inner corona consists of short filaments in *P. cuzcoensis*, of mere tubercles in *P. tetraden*.

***Passiflora spectabilis* Killip, sp. nov.**

Herbaceous vine, glabrous throughout; stem terete, the younger portions subangular; stipules semi-ovate or semi-oblong, 2 to 6 cm. long, 0.8 to 4 cm. wide, obtuse and mucronulate at apex (mucrone up to 1.5 mm. long), rounded at base, entire or undulate, the midnerve eccentric; petioles 3 to 8 cm. long,

bearing two subopposite (or three scattered) sessile ovate glands about 1.5 mm. long, leaves 3-lobed not more than to middle, 6 to 12 cm. along midnerve, 5 to 10 cm. along lateral nerves, 10 to 20 cm. wide (lobes broadly triangular, obtuse or subacute), peltate 5 mm. or more from lower margin (at least the older leaves), 5-nerved, subcoriaceous, glaucescent beneath, at length green; peduncles solitary, 3 to 6 cm. long, articulate at least 5 mm. from apex; bracts ovate, 6 to 7 mm. long, 2 to 3 mm. wide, acute at apex, narrowed at the sessile base, green, borne at point of articulation; flowers 5 to 7 cm. wide; sepals oblong, about 4 cm. long, 1 cm. wide, obtuse, slightly carinate, short-awned (awn 0.5 to 1 mm. long), fleshy, green without, light pink or white within; petals linear, about 2.5 cm. long, 0.4 cm. wide, obtuse, light pink or white; corona filaments filiform, very slender, in four series, those of the two outer about 2.5 cm. long, blue, white at tips, those of the inner 2 to 2.5 mm. long, bifid at apex, white; operculum about 7 mm. high, filamentose nearly to base, the filaments white, blue in upper third; limen tubular, about 5 mm. high, closely surrounding base of gynophore; ovary subglobose; fruit globose, 5 cm. in diameter, purplish when ripe, edible; seeds obovate, about 8 mm. long, 5 mm. wide, coarsely reticulate.

Type in the U. S. National Herbarium, no. 1,356,557, collected at Mishuyacu, about 15 kilometers southwest of Iquitos, Department Loreto, Peru, altitude 100 meters, September 26, 1929, by E. P. Killip and A. C. Smith (no. 29884). Duplicates in the New York Botanical Garden and the Field Museum of Natural History.

Additional specimens examined:

PERU: Junín: Pichis Trail, Eneñas, 1600 meters, *Killip & Smith* 25764. Loreto: Iquitos, 100 meters, *Killip & Smith* 27165.

This is related to the Bolivian plant *P. rubrotincta*, both of these species being peltate much farther from the margin than in the case of other representatives of the subgenus *Granadilla*. *Passiflora spectabilis* has proportionately broader leaves than *P. rubrotincta*, smaller bracts which are borne fully 5 mm. below the flower, and very short awns to the sepals.

Locally this is known as *pucu-pucu*.

Passiflora crassifolia Killip, sp. nov.

Herbaceous tendril-bearing vine; stem subterete, striate, densely villous with spreading grayish hairs; stipules subreniform, 1.5 to 2.5 cm. long, 0.6 to 1 cm. wide, subamplexicaul, aristate (awn about 4 mm. long), reticulate-veined, coriaceous, glabrous above, villous on veins beneath and at margin; petioles villosulous, 2 to 6 cm. long, bearing 4 to 6 subsessile glands, dissitate the whole length of the petiole, 0.6 to 0.8 mm. in diameter; leaves lanceolate or ovate-lanceolate, 10 to 18 cm. long, 6 to 12 cm. wide, not lobed or occasionally obsoletely lobed in lower third, obtuse at apex, deeply cordate at base with a narrow sinus, entire or sparingly serrulate toward base, 7-nerved, reticulate-veined (nerves and veins prominent beneath), entire, thick-coriaceous, dark green and glabrous above, paler and appressed-villous on the nerves and veins beneath; peduncles solitary, about 5 cm. long, villous; bracts lanceolate, 1.5 to 2 cm. long, 0.7 to 0.8 cm. wide, sharp-acuminate at apex, cordulate, subsessile, glabrous above, villous on nerves and veins beneath, borne about 5 mm. below base of flower; calyx tube tubular-campanulate, about 5 mm. long, 6 mm. in diameter; sepals oblong, dorsally awned, the awn 2 to 3 mm.

long; corona filaments in three or four series, the outermost about 7 mm. long; operculum membranous, about 5 mm. high, filamentose in upper half; fruit ovoid or ellipsoidal, 4 to 6 cm. long, 2 to 2.5 cm. wide, villosulous; seeds narrowly oblong, 6 to 7 mm. long, 2 to 3 mm. wide, shallowly tridentate at apex, coarsely reticulate.

Type in the U. S. National Herbarium, no. 1,356,480, collected in thickets, La Merced, Department Junín, Peru, altitude 700 meters, May 29, 1929, by E. P. Killip and A. C. Smith (no. 23434).

Additional specimens examined:

PERU: Junín: La Merced, *Killip & Smith* 23382; *Macbride* 5371. Along Perené River, near "Hacienda 3," Colonia Perené, altitude 600 meters, *Killip & Smith* 25181.

This species is related to *P. menispermifolia* and *P. nephrodes*, differing from both in having essentially entire leaves. In addition, the bracts of *P. menispermifolia* are much narrower and glandular-denticulate, and in *P. nephrodes* the petiolar glands are much more slender. The specimens examined are all in fruit, with badly withered floral parts, so that an accurate description of the coronal structure is not possible. Apparently the outermost corona filaments are much shorter than in *P. menispermifolia* or *P. nephrodes*.

BOTANY.—*Four new grasses.*¹ A. S. HITCHCOCK, Bureau of Plant Industry.

Recently Professor L. F. Henderson, Curator of the herbarium of the University of Oregon, Eugene, sent to the Grass Herbarium of the U. S. National Herbarium for identification, a specimen of grass which represents an undescribed species. In a region so well explored as western Oregon, it was surprising to find a novelty among the grasses.

The grasses recently collected in Peru by E. P. Killip and A. C. Smith were submitted to me for identification. Among these specimens there were two undescribed species, as well as several species not included in the grass flora of Peru as described in the "Grasses of Ecuador, Peru, and Bolivia" by Hitchcock (Contr. U. S. Nat. Herb. 24: 291-556, 1927).

The fourth species here proposed is based on a specimen collected in Chile, but submitted by Dr. Ivan M. Johnston of the Gray Herbarium.

***Agrostis hendersonii* Hitchc., sp. nov.**

Plant apparently annual; culms slender, erect, 2-noded, glabrous, about 11 cm. tall; sheaths glabrous; ligule membranaceous, acute, 2 to 3 mm. long; blades flat or loosely involute, glabrous, 1 to 3 cm. long, 1 mm. wide; panicle condensed, about 2.5 cm. long, purplish tinged; spikelets short-pedicel, 5 to

¹ Received July 9, 1930.

6 mm. long; glumes subequal, with a setaceous slightly spreading tip 1 to 2 mm. long; lemma about 3 mm. long, with 2 setaceous teeth about 0.5 mm. long at the summit, the base or callus pubescent; awn from the middle of the back of the lemma, about 1 cm. long, twice-geniculate, the first bend often somewhat obscure; palea obsolete.

Planta annua (?); culmi erecti, 10 cm. alti, ligula 2-3 mm. longa; panícula condensa, 2.5 cm. longa, purpurascens; glumae subaequales, 5-6 mm. longae, aristatae; lemma 3 mm. longum, 2-aristatum, aristis 0.5 mm. longis, e dorso medio aristam emittens, arista 2-geniculata, 1 cm. longa, callo pubescente; palea nulla.

Type in the U. S. National Herbarium, no. 1,445,585, collected on wet ground, Sams Valley, a few miles from Gold Hill, Jackson County, Oregon, May 4, 1930, by L. F. Henderson (no. 12387).

The specimen at hand has the aspect of a depauperate plant of *Agrostis microphylla* Steud., but differs in the longer awn and in the two setaceous teeth of the lemma. Only two plants were found by Professor Henderson and these may be depauperate specimens. The duplicate type is in the herbarium of the University of Oregon, Eugene.

Calamagrostis stipitata Hitchc., sp. nov.

Plant perennial, stramineous, rather soft; culms densely caespitose, erect, glabrous, 5 to 10 cm. tall; sheaths glabrous, scarious-margined, the uppermost inflated, 3 to 5 mm. wide as folded; ligule membranaceous, acute, 5 to 8 mm. long; blades erect, glabrous, involute, filiform, not more than 0.5 mm. thick, pungently pointed, mostly exceeding the culms; panicles condensed, 1 to 3 cm. long, tinged with purple or bronze, mostly partly included in the sheath, the axis and branchlets minutely hispid; spikelets 3.5 mm. long; glumes equal, acute, glabrous, scabrous on the keel, the tip somewhat erose; floret stipitate, the rachilla internode about 0.5 mm. long; lemma 2 mm. long, the callus hairs copious, as long as the lemma, the apex with 4 rather stout teeth, the awn borne below the middle, straight or a little bent, slightly exceeding the glumes; palea a little shorter than the lemma; prolongation of the rachilla about 0.5 mm. long, the rachilla hairs copious like the callus hairs.

Planta perennis, straminea; culmi dense caespitosi, erecti, 5-10 cm. alti; ligula membranacea, acuta, 5-8 mm. longa; laminae erectae, graciles, involutae, glabrae, quam culmi paullo longiores; panícula condensa, 1-3 cm. longa; spiculae 3.5 mm. longae; glumae acutae; floscula stipitata; lemma 2 mm. longum, aristatum, arista recta glumas paulum superante, apice 4-dentata, callo dense piloso, pilis 2 mm. longis; palea quam lemma paullo brevior; processus rhachillae 0.5 mm. longus, pilis 2 mm. longis.

Type in the U. S. National Herbarium, no. 1,445,584, collected in gravel along a streamlet, Mina Desputada (Los Condes), Prov. Santiago, Chile, alt. 4000 to 4100 meters, January, 1930, by G. Looser (no. 1114).

Also collected in the Cordilleras of Colchaqua, Chile, January, 1930, by Padre Anastasio Pirion (no. 117).

Stipa smithii Hitchc., sp. nov.

Plant perennial; culms closely caespitose, erect, glabrous, usually 3-noded, about 60 cm. tall; sheaths glabrous; ligule a truncate membrane about 0.5